

# Probing energy losses of heavy quarks by dimuon spectra in heavy ion collisions

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## Abstract

In recent years, a great deal of attention has been paid to the study of "hard" probes of quark-gluon plasma – heavy quarkonia, hard hadrons and jets, high mass dimuons – which do not appear as constituents of the thermalized system, but can carry information about the earliest stages of its evolution. In particular, the challenging problem is to study the coherent gluon radiation of fast colour charge in dense QCD-medium. We discuss the potential of future experiments on Large Hadron Collider (LHC) to observe the rescattering and energy losses of hard quarks and gluons in a super-dense and hot matter, like quark-gluon plasma, created in central and semi-central heavy ion collisions. We calculate the high-mass  $\mu^+\mu^-$  spectra (from  $B\bar{B}$  semileptonic decays) and secondary  $J/\psi$  (from  $B$  decays) yield, emphasizing the sensitivity of obtained results to mechanisms of energy losses of heavy ( $b$ -) quarks.

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